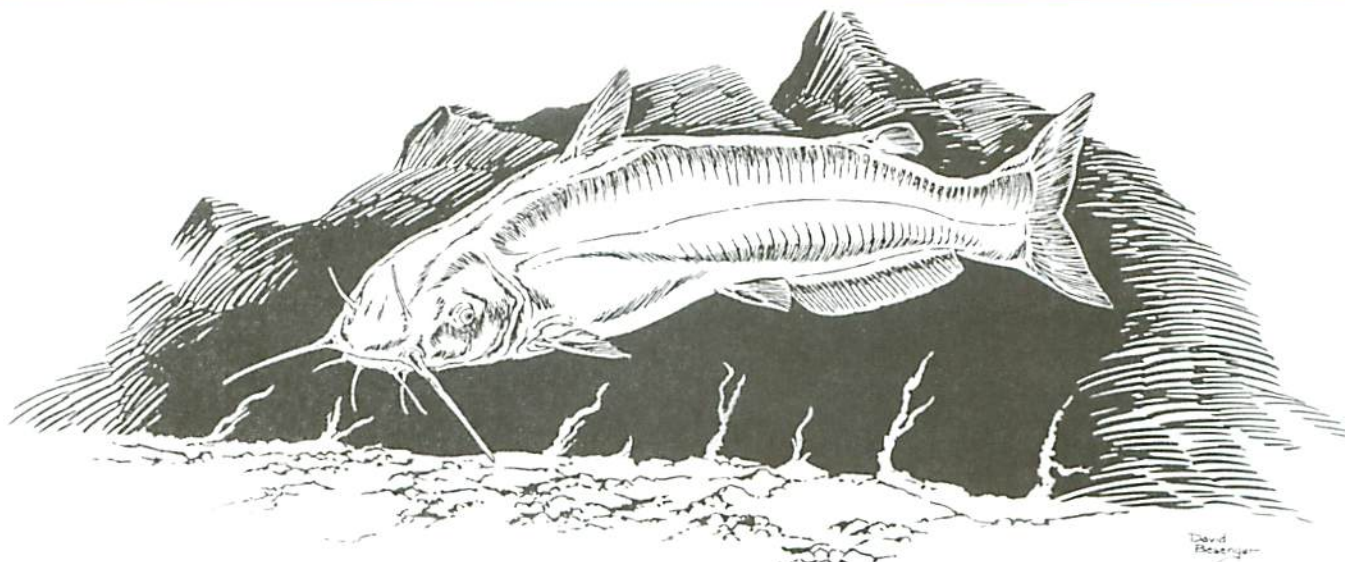




Monoculture of Channel Catfish in Farm Ponds



Channel catfish, one of Missouri's most popular sport and food fish, have been stocked in ponds throughout the state. Many small ponds are managed exclusively for channel catfish.

A small, well-managed pond can produce 300 to 500 pounds of catfish per surface acre each year, providing many hours of recreation and an abundance of high quality food for the table.

Channel catfish have scaleless, cylindrical bodies with soft fins, except for the dorsal and pectoral fins, which have hard, sharp spines that can inflict a painful wound. A catfish's color varies, depending on water clarity. In clear water, catfish may appear dark blue or black, while in muddy water they may be a light yellow or gray. Young channel catfish are typically spotted.

Channel catfish eat a variety of both plant and animal matter. Young catfish, sometimes called fiddlers, feed primarily on aquatic insects, snails, crawfish, green algae, aquatic plants, seeds and small fish. Channel catfish also readily accept commercial pelleted food.

Catfish grow best in warm water, with optimum growth occurring at about 85 degrees.

Channel catfish become sexually mature at three to four years of age. Once mature, the catfish are spurred

to spawn as the water temperature reaches 75 to 80 degrees. When this happens, the male will seek out and prepare a nest site in a secluded, semi-dark area. The female spawns only once per year, though she will sometimes pair before she is ready to spawn. After spawning, the eggs usually take eight days to hatch and another eight days for the fry to prepare to leave the nest. During this time, the male will first protect the eggs, then the fry until they leave the nest.

Ponds for Catfish

Ponds suitable for exclusive channel catfish production should be at least eight feet deep with pond edges sloping quickly to three feet deep to reduce aquatic vegetation problems. For new ponds, soil characteristics should be identified to assess water-holding capabilities.

All trees and debris should be removed from the dam and basin area to assure a good seal and to allow seining of the pond. A turndown drainpipe could also be installed to allow water level reduction and easier harvesting of fish.

Remove logs and other objects that provide cavities

for spawning to discourage natural reproduction of catfish, which could affect the growth of the newly stocked fish in the pond.

Existing fish populations will also need to be removed from the pond to decrease competition and allow maximum growth.

Information concerning intensive channel catfish production can be obtained from the Missouri Fish Farmers Association or your county Extension Agent. For more information on pond construction and preparation, contact the Natural Resources Conservation Service. If you need advice about removing existing fish populations or determining pond water quality, contact the Missouri Department of Conservation.

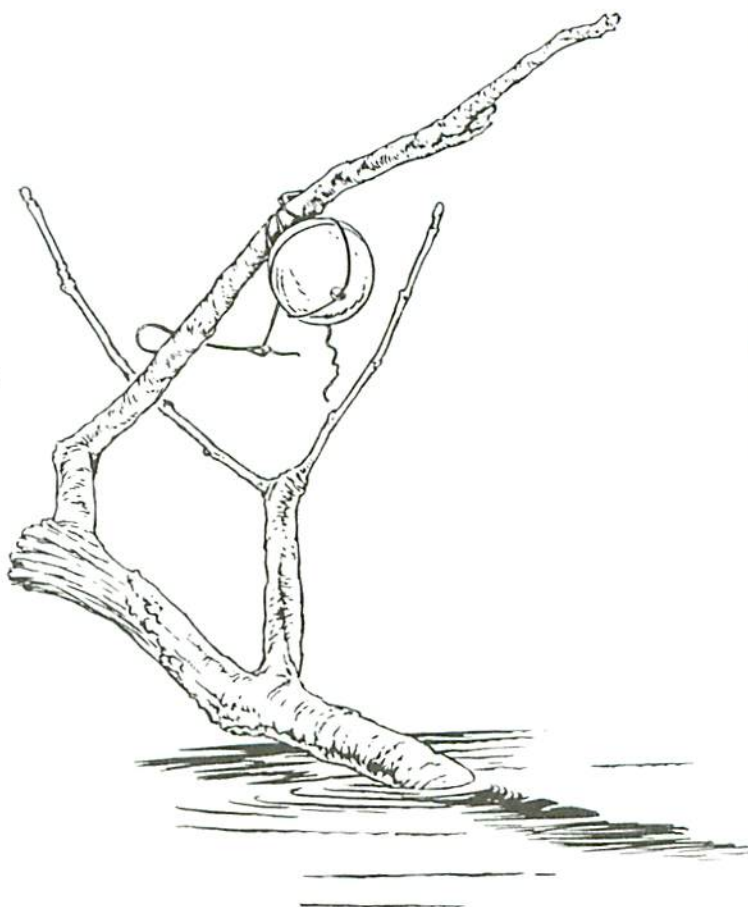
Stocking

Getting a good start to a catfish pond requires an adequate initial stocking of fingerling fish (four to six inches in length). Ponds should be stocked in the spring when water temperatures are below 65 degrees in order to reduce stress on the fish.

The number of catfish stocked will depend on whether or how often you will feed the catfish. If you will not feed the fish or will only occasionally feed them, the pond should be stocked at the rate of 100 to 300 fish per surface acre.

If you do not plan to feed the catfish, it is a good idea to get the stocking off to a good start by providing forage in the ponds before introducing the catfish. An ideal forage would be fathead minnows stocked at a rate of about 1,000 per surface acre.

Channel catfish that will be fed daily in ponds that depend solely upon surface water run-off with no aeration system can be stocked at a maximum rate of



500 four- to six-inch fingerlings per surface acre. See **Table 1** for more complete stocking rates.

Catfish should be purchased from a reputable dealer in order to obtain healthy stock. For a list of commercial fish dealers, contact the Missouri Department of Conservation. Special permits are not required to raise channel catfish, but receipts must be kept as proof of purchase.

In the event natural reproduction occurs, small fingerlings should be removed by seining or trapping. Repeated and frequent efforts may be necessary to remove an adequate number of the small catfish. Excess fingerlings could be stocked in other ponds or sold to neighbors.

Feeding

Both floating and sinking pellets are available for catfish feeding. Floating feed allows you to easily determine the correct amount of feed per day (the amount the fish will consume in about 15 minutes). You can also determine size and health of the fish by

Table 1.

Channel Catfish Stocking Rates	
Feeding Rates	Fingerling Stocking Rate (fish per acre)
No Feeding (south of MO River)	100
No Feeding (north of MO River and in the bootheel)	200
Occasional Feeding	300
Every Other Day Feeding	400
Daily or Demand Feeding	500

observing them as they feed. Floating pellets, however, are more expensive than sinking pellets.

Sinking feed requires you to estimate the total weight of fish in your pond. **Table 2** will help you determine the average weight of the fish, based on average length. You can then multiply average weight by the estimated number of fish. Recalculate every two weeks during the growing season by measuring ten fish. The estimated population should be reduced to account for known mortality.

A disadvantage of sinking feed is that disease or water quality problems, which cause fish to stop feeding, can go undetected, leading to added problems and wasted food.

Some general guidelines for using artificial feeding are:

- Feed no more floating pellets than the fish eat in 15 minutes or follow the feeding guide (**Table 3**) for sinking pellets.
- Do not feed when water temperature is above 90 degrees or below 45 degrees.
- It is usually best to feed catfish in late morning after dissolved oxygen levels have recovered from their low nighttime levels.
- Feed in shallow areas of the pond – three to four feet deep.
- Feed at the same time and place.
- Keep in mind that a decrease in feeding activity may indicate disease or water quality problems.

You can train catfish to feed in the same area daily and also prevent wind and wave action from washing the food to the bank before it is eaten by constructing a

Table 3.

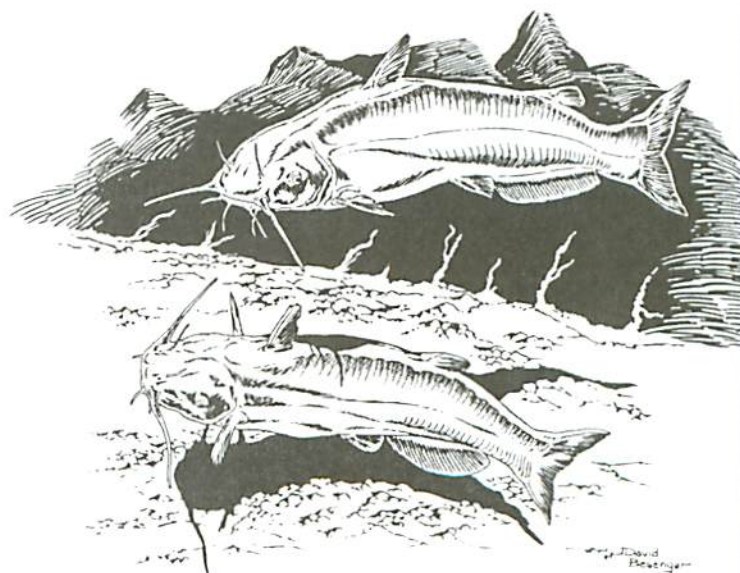
Catfish Feeding Guide		
Surface Water Temperature	Percent of Total Fish Weight to Feed	Feeding Frequency
Under 45°		Do Not Feed
45° - 50°	0.5%	Once A Week
51° - 55°	1.0%	Twice A Week
56° - 60°	1.0%	Every Other Day
61° - 65°	1.5%	Every Other Day
66° - 70°	2.0%	Every Day
71° - 90°	3.0%	Every Day
Over 90°		Do Not Feed

feeding frame. Use vertical 2" x 6" redwood boards or PVC pipe to construct a 10' x 10' floating feeding frame and anchor it in place with one or more concrete blocks. Once the fish have become accustomed to feeding, the frame can be removed. Channel catfish are aggressive and feed should be spread out as much as possible.

Catfish require more feed as the water temperature increases. See **Table 3** for a guide to catfish feeding based on water temperature.

Table 2.

Length/Weight Conversions	
Length of Fish (inches)	Average Weight (pounds - ounces)
4	0 - 0.3
6	0 - 1.0
8	0 - 2.0
10	0 - 5.0
12	0 - 8.0
14	0 - 13.0
16	1 - 5.0
18	1 - 14.0





should be made of polyethylene or treated nylon to prevent catfish spines from tangling in the mesh. Delay harvesting fish if the pond is extremely turbid or a heavy algal bloom is present to avoid problems with "off-flavor" fish.

If your pond is not equipped with a drain, seining provides a good method of removal. A lift net or seine can be placed on the pond bottom in the feeding area, with one edge attached to the shore and the other attached to pulleys on stakes in the pond.

Feed the fish over the net for several days. When they are accustomed to feeding over the seine, lift the net from shore and capture the fish. The trap seine method cannot be used more often than once every 7 to 10 days, as fish become wary of the trap. Specific size fish may be targeted using seines with varying mesh sizes (Table 4).

Table 4.

Seine Mesh Sizes for Catfish		
Mesh Size (inches)	Minimum Length of Fish Captured (inches)	Minimum Weight of Fish Captured (pounds)
1	10	0.30
1.5	13	0.75
2	18	2.00

Harvesting

Channel catfish purchased from a commercial source may be harvested from your pond or lake with a variety of methods including seines, traps, trotlines or jugs. However, the most enjoyable method of harvest is by hook and line.

You can lure catfish with a variety of commercial baits commonly called "stink baits," prepared from blood, cheese and dough. Simply form the bait around a treble hook and allow it to sit on the pond bottom. Other good baits include chicken liver and entrails, beef heart and, the angler's old standby, worms. Fishing is usually most productive in early morning and late evening.

Angling will only produce a partial harvest. If a larger number of catfish, or all the catfish, need to be removed, the pond must be drained or seined.

Lower the pond level down to three or four feet deep and surround the fish with a seine. The seine

Whatever harvest method you choose, a properly stocked, well-managed catfish pond assures a continuous source of good fishing and good eating.